A STUDY ON IMPACT OF GREEN SUPPLY CHAIN BEHAVIOUR ON ORGANIZATION SUSTAINABILITY IN DELHI NCR REGION

A

Synopsis

Submitted by

VIKASH SINGH CHAUHAN

In fulfillment of the award the Degree

of

DOCTOR OF PHILOSOPHY

IN

MANAGEMENT

RAFFLES
UNIVERSITY

ALABBAR SCHOOL OF MANAGEMENT

RAFFLES UNIVERSITY

JAPANESE ZONE, N.H – 48, NEEMRANA , ALWAR

RAJASTHAN – 301705 , INDIA

Signature of SRC Members

RAFFLES UNIVERSITY Research Cell

TITLE: A STUDY ON IMPACT OF GREEN SUPPLY CHAIN BEHAVIOUR ON ORGANIZATION SUSTAINABILITY IN DELHI NCR REGION

(i) **Name of scholar:** VIKASH SINGH CHAUHAN

(ii) **Admission number:-** 2223CWE1023

(iii) **Subject:** Management

(iv) **Proposed Research Supervisor name:** Dr. Deepak Dixit

(v) **Research Supervisor Designation :** Assistant Professor

(v) **School Name :** **Alabbar School of Management**

RAFFLES UNIVERSITY Research Cell

Signature of student

Deepak Dixit
Signature and seal of guide

Content	Page No.
1 . Introduction	2-4
2. Need of study	4
3. Review of Literature	5-8
4. Research Gap Identified in the proposed field of Investigation	7
5. Objectives of study	7
6. Hypothesis	8
7. Research Methodology	8
8. Analysis of Data	9
9. Tentative Chapter Plan	9
10. References	10-11

1. Introduction

Oliver and Webber developed the idea of supply chain management at the start of the 1980s (Delfmann and Albers, 2000). The process of transforming raw materials into finished goods and then transferring those goods to the final consumers is the classic definition of supply chain management. Some well-known experts have also emphasized the intangible significance of information flow through supply chain management in addition to their keen interest in the movement of tangible products. This intangible significance placed emphasis on trust-building, market exchange requirements, supplier base reduction, product development, operating efficiency improvement, and strategic positioning leverage within the industry and throughout the chain (Berry et al., 1994; Bowersox et al., 2002). As a result, the structure of the supply chain is complicated. The term 'Green supply chain management' (GSCM) refers to the concept of integrating sustainable environmental processes into the traditional supply chain. This can include processes such as product design, material sourcing and selection, manufacturing and production, operation, and end-of-life management.

While the specific goal of GSCM is often the reduction of CO2 emissions, other tangible benefits for an organization include; greater efficiency of assets, less production waste, greater innovation, reduction of production costs, reuse of raw materials, increased profitability, perception of added value to client base, and so on.

Key components of GSCM include:

Green design: According to the definition of "green design," it is the process of optimizing design elements, taking into account factors such as general product function, quality, product development cycle, and cost, in order to achieve minimum resource consumption and maximum environmental friendliness throughout the entire product life cycle.

Selection of green materials: Green materials are those that are environmentally friendly over the whole life cycle of the product, have low energy consumption, low resource consumption rates, and can be reused. The primary idea behind green materials is the direct advancement of a material, the safety of the production process, and the reasonableness of the material use.

Green suppliers: Product quality, cost, delivery time, volume flexibility, species diversity, environmental friendliness, and other considerations are the primary criteria for choosing suppliers. Active suppliers put an emphasis on the enhancement of environmental procedures

and the green standards of the supplier's products. Using fewer materials and producing less waste are the goals.

Green manufacturing: According to the realities of the manufacturing system, implement a green production plan, production technology, and a process that uses as few resources, as little energy, and as little environmental pollution as feasible. The criteria for achieving green manufacturing include avoiding potential safety issues, health risks to workers and product users, environmental pollution, trash recycling, and waste disposal as much as feasible during the production process.

Green logistics: Green logistics is the assessment of the adverse effects on the environment during the processes of distribution, handling, storage, and packaging. The following evaluation metrics are listed: The negative effects of transportation on the environment are primarily seen in the amount of fuel used, the emissions of toxic gases, and other factors. Whether it harms the ecosystem during storage through pollution and devastation is unknown.

Green packaging: Green packaging primarily refers to the use of green package design, optimization of the packaging structure, reduction of packaging materials, recycling of packaging materials, and other related concepts.

Scope of the green supply chain management in India

As businesses work to lessen their impact on the environment and achieve sustainability objectives, green supply chain management (GSCM) has become more important on a worldwide scale. Due to a number of reasons, the potential for green supply chain management in India appears bright:

1. Regulatory Environment: To encourage environmental sustainability, the Indian government has put up a number of laws and regulations. Businesses may embrace green practices, including in their supply chains, with the help of programs like the Sustainable Development Goals (SDGs) and the National Action Plan on Climate Change.

2. Growing Awareness: Indian customers are becoming more conscious of environmental concerns and choose sustainable products. This has caused a shift in consumer preference for environmentally friendly goods, motivating businesses to incorporate green practices across their supply chains.

3. Cost Savings: Using green supply chain techniques may save you a lot of money over time. Initiatives for trash reduction, recycling, and energy-efficient transportation may save operating costs and boost overall effectiveness for enterprises.

4. Resource Accessibility: Renewable energy sources like solar and wind power are abundant in India. Reducing carbon emissions and dependence on fossil fuels may be accomplished by implementing renewable energy solutions across the supply chain, such as employing solar-powered warehouses or electric cars for transportation.

6. Government Incentives: To promote sustainable habits, the Indian government offers a number of incentives and assistance programs. For implementing green technology and practices throughout the supply chain, they include tax advantages, subsidies, and grants.

2. Review of Literature

(Huma 2023) conducted a study with dual objectives. Firstly, they aimed to explore the effects of adopting green supply chain practices (GSCPs) on various competitive operational capabilities. Secondly, they sought to investigate the factors influencing market performance. Employing structural equation modeling, the researcher's analyzed data collected from 120 manufacturing firms' managers through self-administered questionnaires. Their findings highlight a positive relationship between GSCPs and competitive operational capabilities. Furthermore, they suggest a direct link between operational capabilities and market performance. In a study by (Lee 2023), an integrative model was proposed to facilitate green product innovation (GPI) using dynamic capabilities theory and the motivation-opportunity-ability (MOA) framework. The research involved surveying 300 Chinese manufacturing firms. Hierarchical multiple regression analysis was utilized to test hypotheses, revealing that both green supply chain practices (GS) and green manufacturing practices (MG) positively impacted internal and external integration, consequently promoting GPI. (Habib 2022) aimed to comprehensively investigate green supply chain management (GSCM) practices and performance in the garment-manufacturing industry in Bangladesh. They developed a multidimensional framework consisting of 12 constructs based on a literature review, involving eight practice-related constructs and four performance-related constructs. Survey data from 403 garment-manufacturing firms were analyzed using confirmatory factor analysis and structural equation modeling. The results indicated that the implementation of GSCM practices positively affected environmental, economic, and operational performance,

subsequently influencing organizational performance. (Maaz 2022) conducted a study in the Indian food processing industry to empirically test a comprehensive model for green supply chain management (GSCM) practices. They introduced green intellectual capital (GIC) and green supply chain orientation (GSCO) as antecedents to successful GSCM practices, with organizational performance as a consequence. The study surveyed 139 plant-level managers. The findings highlighted the positive impacts of both GIC and GSCO on GSCM practices, subsequently improving economic, operational, and organizational performance. (Lerman 2022) expanded the theory of digital transformation in green supply chain management (GSCM) by introducing the concept of smart green supply chain management (Smart GSCM). The study involved data analysis from 473 manufacturing companies and indicated that smart supply chain practices contributed to green performance through managing external and internal green relationships and operations. The researchers emphasized the necessity of a GSCM configuration to mediate the effect of digital transformation on achieving green performance. (Umar 2022) explored the impact of Industry 4.0 on economic and environmental performance, mediated by green supply chain management (GSCM) practices, in Pakistan's emerging economic context. The findings highlighted that GSCM practices played a mediating role between Industry 4.0 and both economic and environmental performance, with Industry 4.0 positively affecting GSCM practices. (Kalpande 2021) integrated green supply chain management (GSCM) practices, performance, pressures, and barriers with organizational performance theories. The study aimed to assess the current status of GSCM among Indian manufacturers. Using a systematic review approach, the researchers identified various categories of GSCM practices, performance metrics, pressures, and barriers and aligned them with theoretical lenses, contributing to a deeper analysis of GSCM. (Nkrumah 2021) updated the work of Carter and (Easton 2011) by conducting a systematic review of sustainable supply chain management (SSCM) literature from 2010 to 2018. Using a systematic literature review methodology, they observed the evolution of SSCM in terms of focus, theory, analysis, and methodology. (Ahmed 2020) investigated critical barriers to and opportunities for adopting green supply chain management (GSCM) in the construction industry of developing countries. Data from 163 professionals and 15 field professional interviews were collected from 11 developing countries. The research highlighted 34 barriers and 23 opportunities extracted from the literature, emphasizing the need for involvement and support in overcoming barriers and leveraging environmental opportunities. (Bag 2020) identified barriers to adopting block chain technology in green

supply chain management (GSCM) and analyzed their cause-and-effect relationship to prioritize strategic decisions. The study examined 15 potential barriers related to blockchain adoption in GSCM and found that "lack of management vision" and "cultural differences among supply chain partners" were the most influential barriers. (Singh 2020) aimed to uncover the significance of green supply chain management (GSCM) and its impact on organizational sustainability through lean practices such as Kaizen and innovation management. The study indicated the combined potential of Kaizen, innovation management, and government policies to influence environmental thinking through the supply chain. While individual innovation management strategies and Kaizen had positive impacts, improving government policies was highlighted as crucial for enhancing positive environmental impacts through the supply chain.

3. Research Gaps

Upon a comprehensive analysis of existing literature reviews, it becomes evident that numerous studies have explored green supply chain behavior. However, there remains a significant research gap within the context of the Delhi NCR region. This region accommodates a substantial concentration of production-based companies, yet few study has ventured into this specific area. Consequently, this study takes a progressive step by addressing this unexplored terrain, aiming to provide an accurate depiction of the impact of green supply chain management and the challenges encountered by supply chain industries in this locale. The selection of the Delhi NCR area for investigation is particularly strategic due to its status as a hub for such industries. This strategic choice allows the study to shed light on previously unexamined aspects and contribute meaningfully to the existing body of knowledge.

Need of the study

The study's significance lies in illuminating how green supply chain behavior profoundly shapes organizational sustainability. By deciphering economic gains, reduced environmental impact, and improved social engagement, it guides businesses toward resilience and competitive advantage. Addressing research gaps, it aids industry-specific adaptation, technological integration, and fosters ethical practices. In a world increasingly valuing sustainability, this study empowers organizations to align with eco-conscious consumer demands, strengthen brand equity, and contribute to a greener future.

5. Objectives of Study

1. To analyze the various dimensions of green supply chain behavior in organizations.

2. To access the impact of green supply chain behavior on organizational sustainability.

3. To identify the mechanisms through which green supply chain behavior contributes to improved sustainability.

6. Hypothesis

H0: There is no significant difference in the various dimensions of green supply chain behavior among organizations operating in different industries.

H1: There is no significant relationship between organizations' green supply chain behavior level and their overall sustainability performance.

H2: There is no significant association between specific mechanisms of green supply chain behavior and the enhancement of organizational sustainability.

7. Research Methodology:

7.1 Research Design

The study employs descriptive research and data collection will be carried out through the utilization of a structured questionnaire.

7.2 Sample Design

To investigate the influence of Green supply chain behavior on organizational sustainability in the Delhi NCR region, a questionnaire will be administered in a bilingual format, encompassing both Hindi and English languages. The study's sample will be obtained through the creation of questionnaires, which will be developed based on the variables/items derived from the existing literature. The researcher intends to gather responses from 400 participants within the NCR region of Delhi. Construct well-structured surveys aimed at supply chain professionals, managers, and decision-makers within various organizations and conduct comprehensive interviews with key stakeholders from organizations acknowledged for their commendable green supply chain practices. Additionally, secondary data will be acquired from a range of sources, including Industry Reports, Research Articles, Government and Regulatory Data, Industry Reports, and consulting firms' findings.

8. Analysis of Data

Data will be analyzed through statistical analysis tools such as T-test, ANOVA, Correlation, descriptive analysis, and so on.

9. Tentative Chapter Plan

i) Introduction
ii) Review of Literature
iii) Research Methodology
iv) Data Analysis
v) Finding, Conclusion, and Suggestion

References:

Huma, S., Ahmed Siddiqui, D., & Ahmed, W. (2023). Understanding the impact of Green supply chain management practices on operational competitive capabilities. *The TQM Journal*,*35*(3),pp. 796-815.

Lee, H. (2023). Drivers of green supply chain integration and green product innovation: a motivation-opportunity-ability framework and a dynamic capabilities perspective. *Journal of Manufacturing Technology Management.*

Habib, M. A., Balasubramanian, S., Shukla, V., Chitakunye, D., & Chanchaichujit, J. (2022). Practices and performance outcomes of green supply chain management initiatives in the garment industry. *Management of Environmental Quality: An International Journal*.

Maaz, M. A. M., Ahmad, R., & Abad, A. (2022). Antecedents and consequences of green supply chain management practices: a study of Indian food processing industry. *Benchmarking: An International Journal*, *29*(7),pp. 2045-2073.

Lerman, L. V., Benitez, G. B., Müller, J. M., de Sousa, P. R., & Frank, A. G. (2022). Smart green supply chain management: A configurational approach to enhance green performance through digital transformation. *Supply Chain Management: An International Journal*, *27*(7),pp. 147-176.

Umar, M., Khan, S. A. R., Yusoff Yusliza, M., Ali, S., & Yu, Z. (2022). Industry 4.0 and green supply chain practices: an empirical study. *International Journal of Productivity and Performance Management*, *71*(3),pp. 814-832.

Kalpande, S. D., & Toke, L. K. (2021). Assessment of green supply chain management practices, performance, pressure and barriers amongst Indian manufacturer to achieve sustainable development. *International Journal of Productivity and Performance Management*, *70*(8),pp. 2237-2257.

Nkrumah, S. K., Asamoah, D., Annan, J., & Agyei-Owusu, B. (2021). Examining green capabilities as drivers of green supply chain management adoption. *Management Research Review*, *44*(1), 94-111.

Ahmed, M., Thaheem, M. J., & Maqsoom, A. (2020). Barriers and opportunities to greening the construction supply chain management: cause-driven implementation strategies for developing countries. *Benchmarking: An International Journal*.

Bag, S., Viktorovich, D. A., Sahu, A. K., & Sahu, A. K. (2020). Barriers to adoption of blockchain technology in green supply chain management. *Journal of Global Operations and Strategic Sourcing*, *14*(1),pp. 104-133.

Singh, J., Singh, H., & Kumar, A. (2020). Impact of lean practices on organizational sustainability through green supply chain management–an empirical investigation. *International Journal of Lean Six Sigma*, *11*(6),pp. 1035-1068.